

WE CLAIM:

1. An isolated, purified or recombinant DJ11 polypeptide, comprising a Kunitz-type protease inhibitor domain or a biologically active portion thereof, wherein said polypeptide comprises an amino acid sequence having at least 98% amino acid identity to an amino acid sequence selected from the group consisting of:
  - residues at positions 77 to 127 of SEQ ID NO 1; and
  - residues at positions 52 to 102 of SEQ ID NO 2.
2. The polypeptide of claim 1, wherein said polypeptide or fragment thereof is capable of interacting with a serine protease.
3. The polypeptide of claim 1, wherein said polypeptide or fragment thereof inhibits the catalytic activity of a serine protease.
4. The polypeptide of claim 1, wherein said polypeptide comprises an amino acid sequence at least 95% identical to an amino acid sequence selected from the group consisting of SEQ ID NOS 1 and 2.
5. The polypeptide of claim 1, wherein said polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS 1 and 2.
6. A substantially purified DJ11 polypeptide encoded by a nucleic acid sequence of SEQ ID NO 11, or a biologically active portion of said polypeptide.
7. An isolated, purified or recombinant DJ11 polypeptide according to any one of claims 1 to 5, wherein said polypeptide comprises at least one amino acid deletion, substitution or insertion.
8. A purified or isolated nucleic acid selected from the group consisting of:
  - (i) a nucleic acid molecule encoding a DJ11 polypeptide according to claim 1;
  - (ii) a nucleic acid molecule encoding a DJ11 polypeptide or a biologically active fragment thereof, comprising the nucleic acid sequence selected from the group consisting of SEQ ID NO 11, fragments thereof, and the sequences complementary thereto; and

- (iii) a nucleic acid, the sequence of which is degenerate as a result of the genetic code to the sequence of a nucleic acid as defined in (i) and (ii).
9. An isolated or purified nucleic acid encoding a DJ11 polypeptide or a biologically active fragment thereof, comprising a nucleic acid sequence at least 90% identical to a nucleotide sequence selected from the group consisting of SEQ ID NOS 3, 8 and 11, and the sequences complementary thereto.
  10. The nucleic acid of claim 9, wherein said nucleic acid is operably linked to a promoter.
  11. An expression cassette comprising the nucleic acid of claim 10.
  12. A host cell comprising the expression cassette of claim 11.
  13. A method of making a DJ11 polypeptide, said method comprising  
providing a population of host cells comprising a recombinant nucleic acid according to claim 8; and  
culturing said population of host cells under conditions conducive to the expression of said recombinant nucleic acid;  
whereby said DJ11 polypeptide is produced by said population of host cells.
  14. The method of claim 13, further comprising purifying said polypeptide from said population of cells.
  15. An isolated DJ11 polypeptide, wherein said polypeptide is encoded by a nucleic acid of SEQ ID NO 11.
  16. An isolated DJ11 polypeptide comprising at least 12 contiguous amino acids of the sequence of SEQ ID NO:1, wherein said polypeptide possesses at least one DJ11 biological activity.
  17. An isolated DJ11 polypeptide or fragment thereof, said polypeptide comprising an amino acid sequence of at least 8 contiguous amino acids of amino acid residues 1 to 25 of SEQ ID NO 1.

18. An anti-DJ11 antibody that selectively binds to the polypeptide of any one of Claims 1 to 7, or 15 to 17.
19. A method of assessing the biological activity of a DJ11 polypeptide comprising:
  - (a) providing a DJ11 polypeptide or a fragment thereof; and
  - (b) assessing the ability of the DJ11 polypeptide to perform a DJ11 biological activity under conditions appropriate for said activity.
20. The method of claim 19, wherein said DJ11 biological activity is inhibition of a protease.
21. A method of determining whether a DJ11 polynucleotide is present in a biological sample, said method comprising the steps of:
  - (a) contacting a biological sample from a subject with a polynucleotide that hybridizes under stringent conditions to a nucleic acid of Claim 8 or 9; and
  - (b) detecting the presence or absence of hybridization between said polynucleotide and an RNA species within said sample;wherein a detection of said hybridization indicates that said DJ11 polynucleotide is present in said sample.
22. The method of claim 21, wherein said polynucleotide is a primer, and wherein said hybridization is detected by detecting the presence of an amplification product comprising said primer sequence.
23. A method of determining whether a DJ11 polypeptide is present in a biological sample comprising the steps of:
  - (a) contacting a biological sample with an anti-DJ11 antibody or DJ11-binding antibody fragment thereof under conditions conducive to antibody binding; and
  - (b) detecting the binding of said antibody or antibody fragment to a polypeptide in said sample;wherein a detection of said binding indicates that said DJ11 polypeptide is present in said sample.
24. An isolated or purified nucleic acid encoding a DJ11 signal polypeptide comprising a sequence selected from the group consisting of:

- (a) a nucleic acid sequence at least 90% identical to a nucleotide sequence of nucleotide positions 1 to 75 of SEQ ID NO 11, and the sequences complementary thereto;
  - (b) a contiguous span of at least 20 nucleotides selected from nucleotide positions 1 to 75 of SEQ ID NO 11 and the sequences complementary thereto; and
  - (c) the nucleotide sequence of nucleotide positions 1 to 75 of SEQ ID NO 11, or a biologically active fragment thereof, and the sequences complementary thereto.
25. The nucleic acid of claim 24, wherein said nucleic acid is operably linked to a nucleic acid encoding a protein of interest.
26. The nucleic acid of claim 25, wherein said protein of interest is a polypeptide according to any one of claims 1 to 7, or 15 to 17.